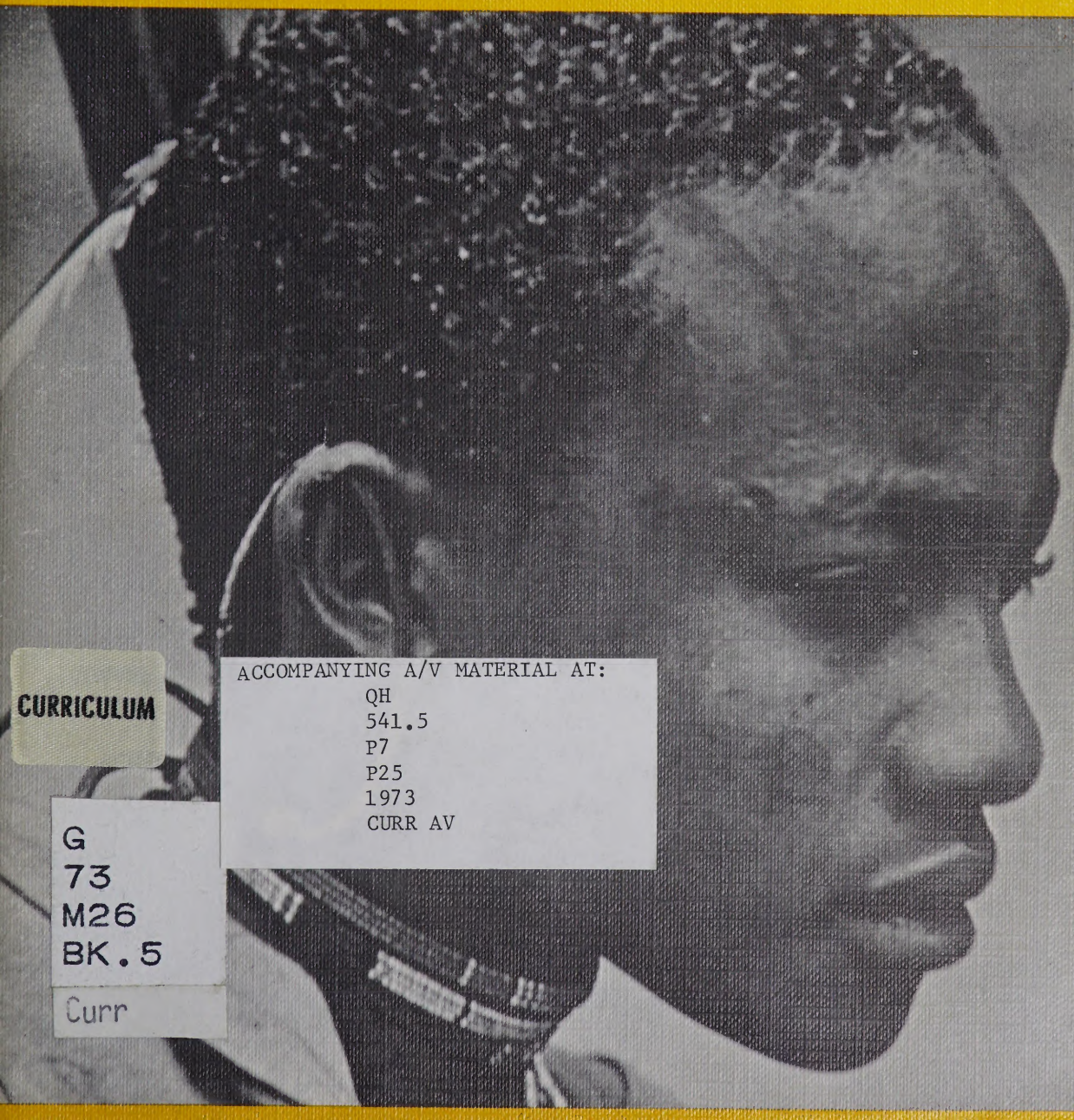
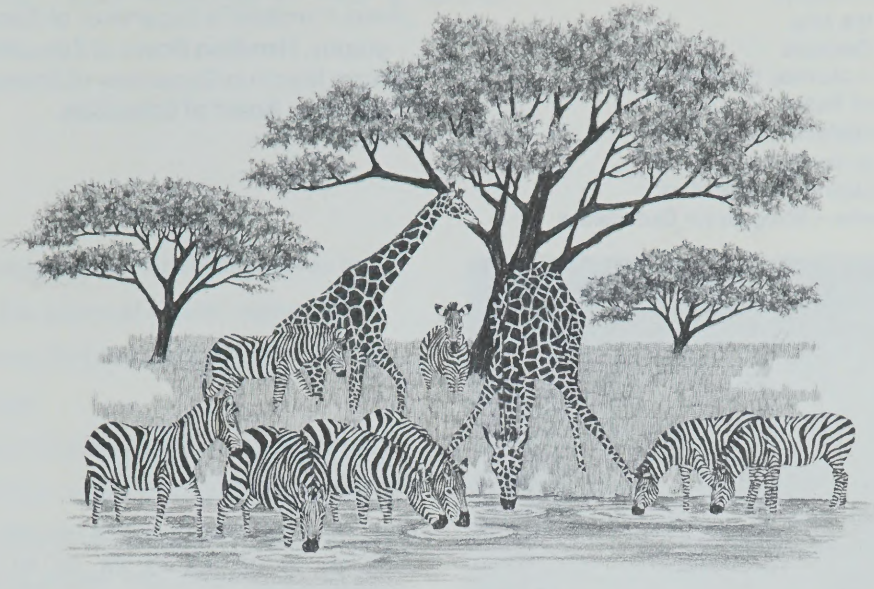
Grassland Safari

MAN IN HIS WORLD





Grassland Safari

Man In His World

James Forrester — *Co-ordinating Editor*

Gary Birchall
James Forrester
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Fitzhenry & Whiteside Limited

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Teachers' Guides

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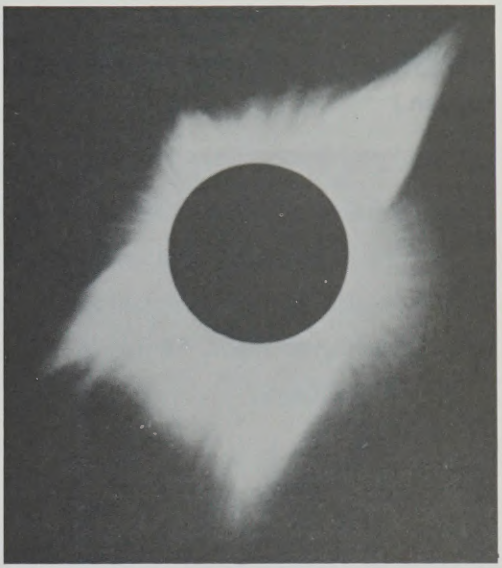
The Energy Cycle

Our story starts 93 million miles away in space. The atoms of a small, aging yellow star are sending a constant flow of energy into space.

A little more than eight minutes later, some of the radiant energy falls on a tiny planet where it is absorbed by countless green organisms. These plants use water from the soil, carbon dioxide from the air, and the light energy to make food.



DID YOU KNOW?

. . . The amount of energy from the sun that falls on a city lot in one day could heat the average home for six days.

. . . The sun probably can continue to generate energy at its present rate for 60 billion years.

DID YOU KNOW?

. . . A green plant breathes oxygen like every other living thing on earth. (During the day, however, more oxygen is given off during the process of photosynthesis than the plant can use for breathing. Thus many people mistakenly believe that plants breathe in carbon dioxide and breathe out oxygen.)

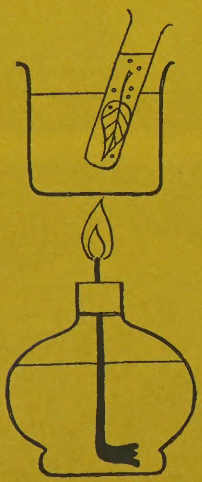
. . . Photosynthesis can occur on a bright moonlit night.

. . . The light from an electric lamp will allow photosynthesis to occur.

. . . Plants with leaves that have white spots will not produce starch in those areas. (Why?)

. . . You'd be rich if you could make food as green plants do, just by using air, sunshine, and water.

1. Place a drop of iodine on a slice of potato. The resulting colour indicates that starch is present in the potato. Use the iodine solution to see if starch is present in other foods. Would this experiment work with wheat flour?



2. Place one plant in sunshine for a couple of days and another in a dark cupboard. After this time remove a leaf from each plant. Ask your teacher to boil each leaf in alcohol. What is the green colour in the alcohol? Now spread each leaf on a piece of blotting paper and test to see if starch is present in either leaf. Is sunlight necessary for the production of starch? Do grasses react in the same way?

3. Place two small plants under large glass jars and leave them in the sunlight for a couple of days. A little sodium hydroxide is put in one of the jars to remove the carbon dioxide. What do you expect to happen when the leaves are tested for starch? Is carbon dioxide necessary for the production of starch?

A large organism moves slowly through the fields of grass, stopping to graze here and there on the fresh green plants.

Hidden in the tall grass another animal watches and waits. The wildebeest raises his head and looks off across the grasslands of East Africa.

Suddenly the lion springs. With a few surging bounds the big cat leaps upon its prey, powerful jaws seeking the spinal column. The terrified wildebeest is held in a deadly embrace.

The frantic thrashing stops abruptly and the red dust of Africa hangs in the air. A second lion stalks regally to the kill. With a soft grunt the sleek predator crouches and begins to eat. The setting sun touches his mane with gold.

The dusty, panting lioness flops in the grass nearby to wait her turn.

Huge birds swoop silently to rest near the feeding lion. Awkwardly the vultures hobble close and they too wait.

A Turn for the Verse . . .

Advice to Young Naturalists

Did you ever attempt to shampoo
A Gnu?
I do not advise you to try.
He is apt to retort
With a sniff and a snort,
And you may find his horn in your eye.

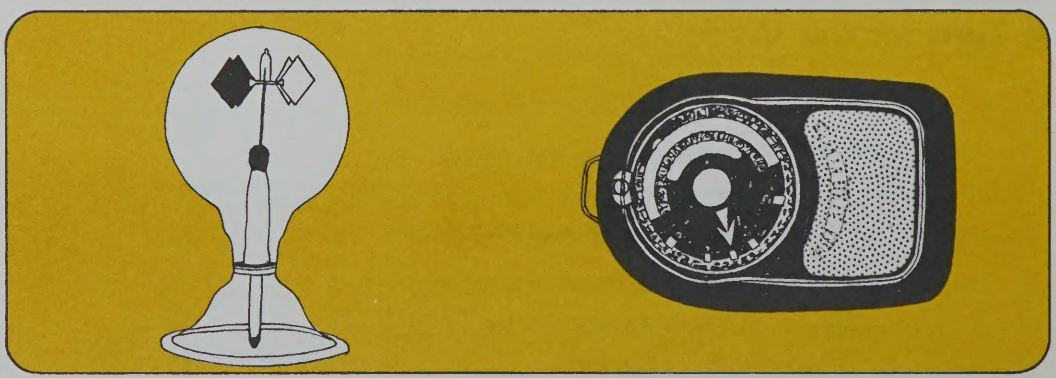
Laura E. Richards

THINGS TO DO

1. The energy which enables you to walk and talk and play comes from the sun. Trace one of the paths of energy from the sun to you. (If the sun ever goes out we'll all have atomic ache!)

2. A Crooke's radiometer is an instrument used to detect heat radiation. Place the radiometer near a lamp or other source of heat. Then place this heat detector where it is cool. Can you use the radiometer to detect heat coming from the sun? Of the sources you tested, which was hottest?

3. Can you use a thermometer to detect heat from the sun? Use the thermometer to measure the temperature at various points in your classroom. If you join the points that have the same temperature, you can make a "heat map" of your room. Can you tell where the sources of heat are? How would an engineer improve the heating of the room? Would your heat map be the same at floor level?



THINGS TO DO

A light meter is an instrument used to detect light radiation. Turn off the lights in your classroom. What sources of light remain? When the lights are turned on, is your room evenly lit? Can you make a "light map" of your room? As an engineer, could you improve the lighting in your school? Can you use the light meter to detect light from the sun?

DID YOU KNOW?

. . . Grasses are more important to us than any other plant.

. . . Grasses help to prevent floods.

. . . Grasses provide much of our food because corn, rice, wheat, sugar cane — just to name a few of the things we eat — are all grasses.

. . . Grasses provide food for the animals whose flesh we eat.

. . . Tall, feathery bamboos are grasses.

. . . Grasses thrive where there is little moisture as well as where there is much.

. . . Grasses can withstand strong winds.

. . . Grasses produce many seeds.

. . . Winds and animals and men carry grass seeds far and wide.

. . . Some grass seeds are shaped so that they can catch rides.

. . . Of all plant families, grasses are the largest.

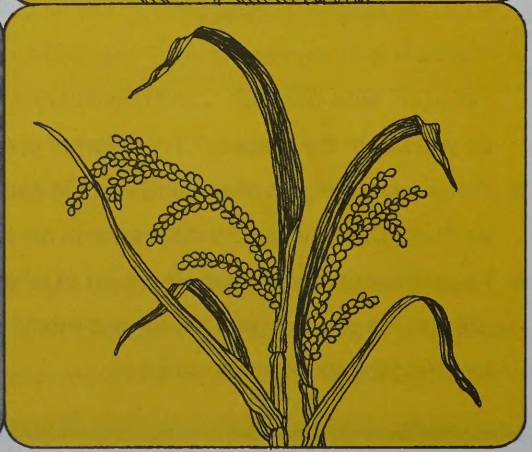
. . . Burning grass has long been a widespread practice by men wishing to have a plentiful regrowth of grass.

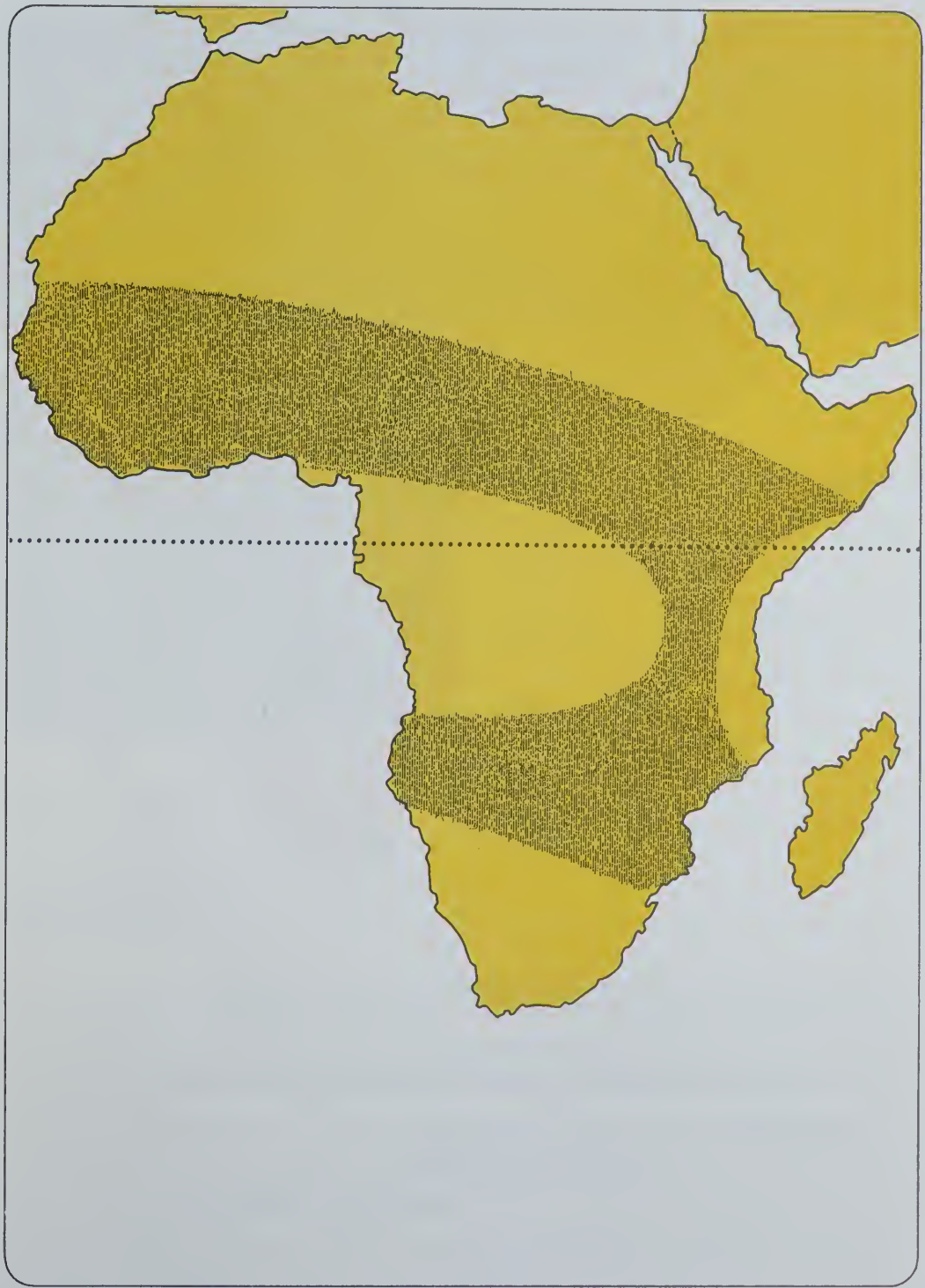
. . . In areas of slight or uncertain rainfall, grasses may remain dormant during drought periods, even though temperatures are high enough for growth.

THINGS TO DO

1. Try a day on a grass-free diet. What will you have for breakfast? Sorry, no cereals, or sugar, or toast. Would you like to live in a world without grass plants?
2. Plant some grass seed in soil in each of 2 cake tins. Expose each tin to the same light and moisture. Mow one plot. Can grass tolerate mowing or grazing well? What differences do you see in the grasses? Try different grasses to see which can be cut best.
3. Place equal weights of sod and earth in each of 2 cake tins. Tilt each tin and sprinkle water on them. Can you see the difference in runoff?
4. Count the number of seeds in an ear of wheat. How many wheat plants do you think would grow in the space of one tile in your room? How many grains of wheat would be produced by a field the size of your room?

The Grassland Community





The distance from Ottawa, Canada, to the study area is about 7900 miles.

1. How long would it take you to drive a car from Ottawa to the study area at 60 miles an hour?
2. What would be the difficulties in making the trip?
3. What method and route would you choose to get to the study area? Draw a sketch map. Explain your choice.
4. What type of clothing would you take? Why?

North American grasslands do not have the same animals.

1. Make a list of the animals that lived in the grasslands of North America before they were settled by the white man.

2. Show how in many ways the North American animals are similar to those in East Africa.

DID YOU KNOW?

. . . Animal breeders have been able to cross a steer with a buffalo.

THINGS TO DO

1. If the young born to a mating of a lion and a tiger is a liger, what would you call the young born to a steer and a buffalo? (This can be dangerous! Did you hear about the scientist who was nearly killed while trying to cross an intersection with a baby carriage?)
2. Find out what desirable characteristics the young one would receive from each parent.
3. Draw a picture of what you think this animal would look like.
4. Find out why the cattalo was not a success.
5. Find out what other strange animals have been bred by man.
6. Find out what plants have been produced by man.

1. Name the three countries whose borders are shown on the map.
2. Name the three important lines of latitude shown.
3. Draw a sketch map and mark on the following places.
   (a) Indian Ocean
   (b) Lakes Victoria, Rudolf, Tanganyika, Nyasa
   (c) Nairobi, Arusha, Tabora

4. Find out the elevation of

   Mt. Kenya

   Mt. Meru

   Mt. Kilmanjaro

   Indian Ocean

5. Examine the picture of Mt. Kilimanjaro.

   Describe the changes you notice in vegetation.

   Account for the changes you describe.

THINGS TO DO

1. Place a drop of water on one glass slide and another on a second slide. Blow across one of the drops of water. Which drop disappeared first? Where did the water go? What is this change from a liquid to a gas called?
2. Can you devise other simple experiments to show how temperature, surface area, and humidity are factors that affect the rate of evaporation?
3. Heat some water in a small jar with a piece of glass on top. Place an ice cube on the glass. Can you make it rain in your jar? What is this change from a gas to a liquid called?

DID YOU KNOW?

. . . It takes heat energy to enable the particles of a liquid to evaporate.

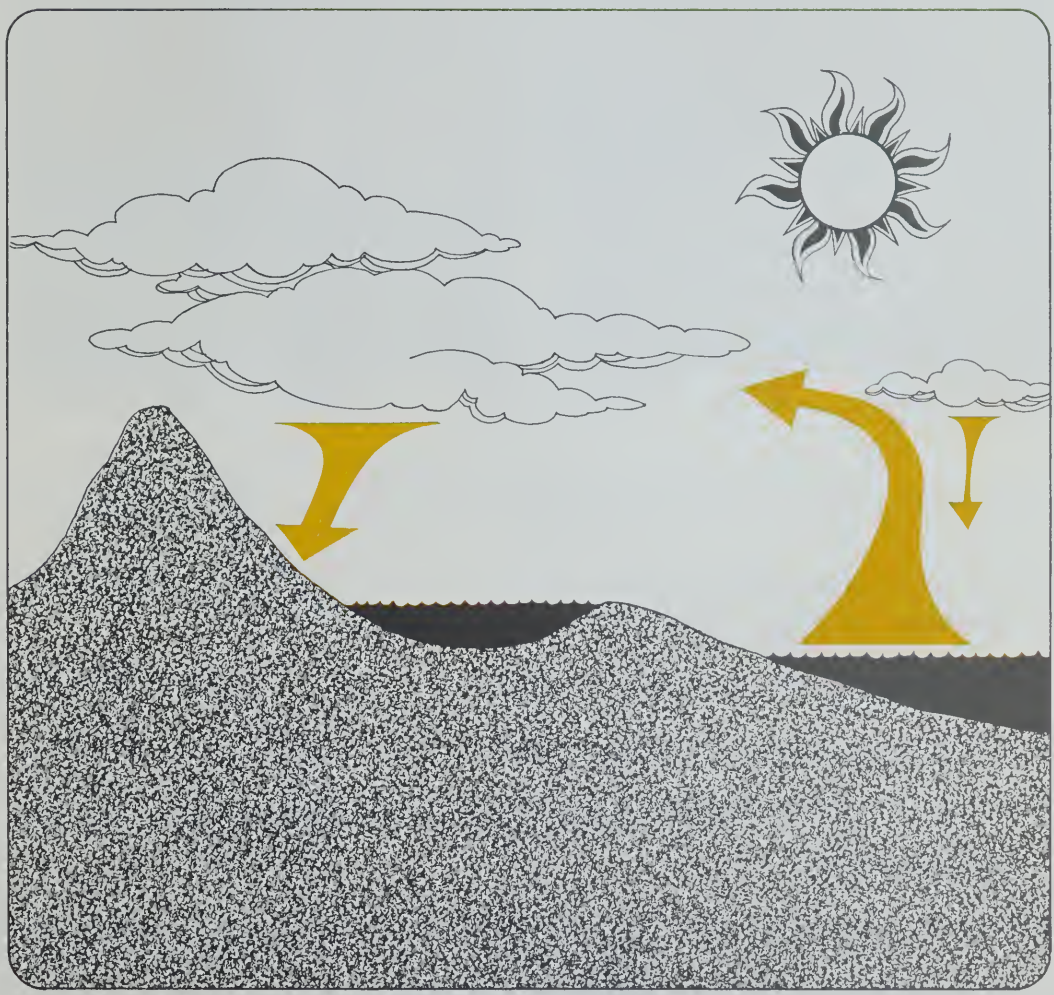
. . . This energy is taken from the surroundings.

. . . The same amount of heat energy needed to turn a liquid into a gas is released again when the gas turns back to liquid.

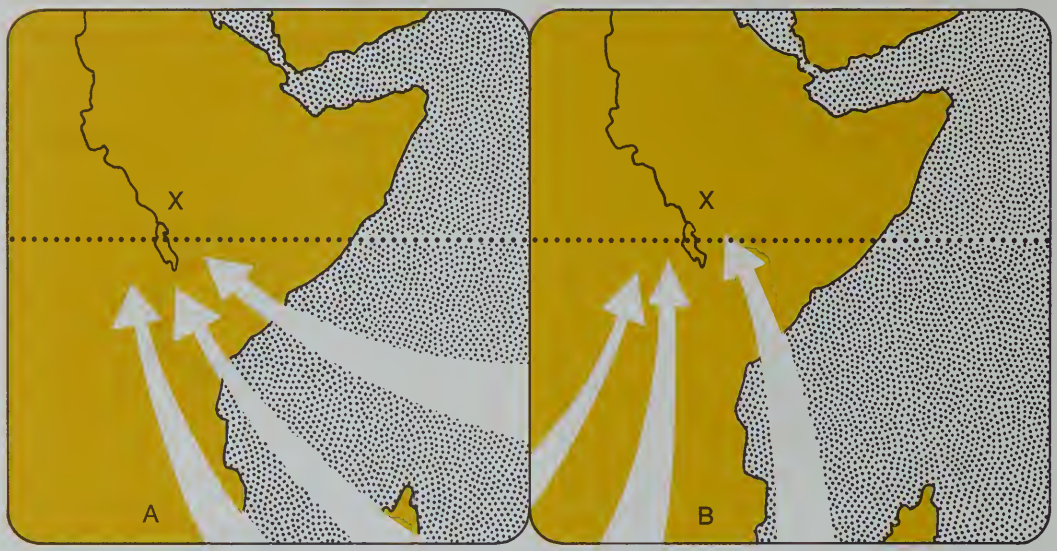
. . . It takes almost 7 times as much energy to vaporize water as it takes to melt an equal mass of ice.

. . . The heat energy from the sun falling on 1 square mile of ocean evaporates more than 60 tons of water every hour.

WATER CYCLE



WET & DRY



The two maps above show what the weather is like in the study area, at two different times of the year.

1. What would the weather be like at X in map A?
2. What would the weather be like at X in map B?
3. Which map would you label "the rainy season"?
4. What name would you use to describe the weather of the other map?

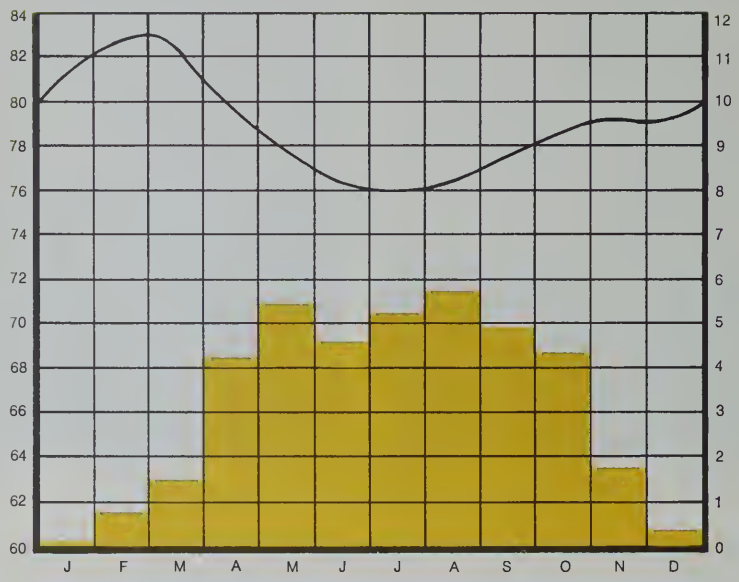
   Give your reasons.
5. Using the climograph on page 18, list the seven wettest months of the year. What months would you label on your wet season map above?
6. Why does the wet season come at this time of the year?
7. In which month does the rainy season end? Can you give some reason why it ends?

1. Which diagram above belongs with map A and which belongs with map B?
2. Give some reasons for your choices.
3. During which season of the year would you rather travel to the study area? Why?

DID YOU KNOW?

. . . The tropical sun rises at about 6 a.m. and sets at about 6 p.m. every day, all year. At the equator then, there are approximately 12 hours of light each day.

GREEN & BROWN



1. Why would a native of this area not use the words summer, fall, winter and spring to describe the seasons?
2. What words would the African native use instead?
3. Since travel is difficult in East Africa at any time of the year, in your opinion what month(s) would be the best for a safari?
4. Would you go on a canoe trip or a hike in your own country at this time? Explain.

STUDY THE DIAGRAMS.

1. What do the letters mean?
2. What do the words green and brown tell you?
3. How do the colours reflect the climate?
4. Write a paragraph to tell what you have learned from this exercise.
   Use the climate graph to help you.

DID YOU KNOW?

. . . At the beginning of the long rains, a number of lilies which smell of strong perfume appear.

The lion is a carnivore. What does the word "carnivore" mean?

1. What kind of animal are you?
2. Would you be able to live if there were no carnivores?
3. Would you be able to live if there were no herbivores?
4. Would you be able to live if there were no green plants?
5. Find out whether there are more herbivores than carnivores in East Africa.
6. Do you imagine there are more green plants than herbivores in East Africa?
7. Find out what would happen to the green plants if a severe drought came to East Africa.
8. What would happen to the herbivores and to the carnivores?
9. What would the natives do?
10. Show how the grassland community is composed of green plants, herbivores, carnivores and scavengers.

These vultures are scavengers.

1. What does the word scavenger mean?
2. What problems would we have if there were no scavengers?
3. List some scavengers that are common in your area.
4. Why are scavengers so important in the grasslands of East Africa?
5. Are vultures carnivores or herbivores? Explain.

A Turn for the Verse . . .

SAGE COUNSEL

The lion is the beast to fight:
He leaps along the plain,
And if you run with all your might,
He runs with all his mane.

Arthur Quiller-Couch

This giraffe is an herbivore.

1. What does "herbivore" mean?
2. Name several herbivores.
3. How do the giraffe's long neck and large eyes help him survive in a dry country where lions live?

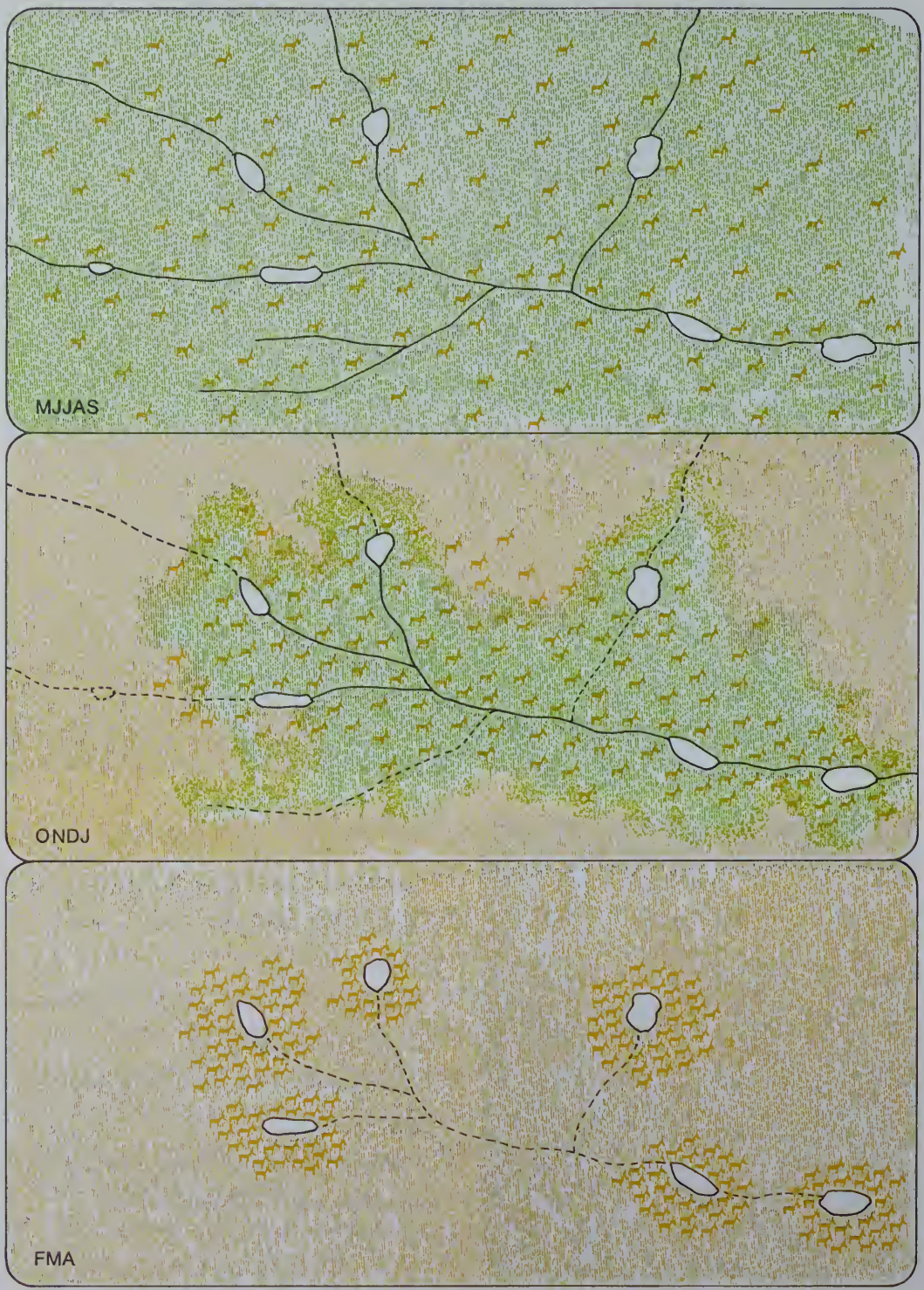
DID YOU KNOW?

. . . Many herbivores eat quickly, then go to a quiet place to enjoy their meal again by chewing their cud.

. . . Grassland herbivores often are swift and have large powerful horns.

. . . Grassland herbivores move in very large herds.

. . . Offspring of such animals can stand and walk within minutes of being born.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1. Name some of the animals which would be grazing in the area shown.
2. What changes are shown from the top to the bottom of these diagrams? Explain why these changes have occurred.
3. If you were a lion or a cheetah, what interest would you take in these animals? Why?
4. Which time of the year do you think the lion would prefer? Explain your choice.

THINGS TO DO

Read the following statements. Decide which ones best describe the green, and which best describe the brown, diagram.

1. The plains have colours that look dry and burnt, like sun-baked Mexican pottery.
2. The lions live contentedly in the soft shade of the broad acacia.
3. The long rains fail.
4. When the rains begin, vast stretches of burnt grass begin to show fresh green sprouts and hundreds of birds appear.
5. The Masai set fire to the dry plains in order to get new green grass for their cattle when the first rains come.
6. The burnt plains lay black, streaked with white and grey ashes.
7. Up to the day of the rains, the country gets hotter and drier every day.
8. On the plains, the water holes have nearly dried up.
9. The eland and the gazelle come when the green grass appears.

Study the three diagrams above. They show the spacing of trees in three different parts of the study area.

1. Area 2 receives 30″ of rain a year. Which area would receive less than 30″ a year? Explain your answer.

2. Which area would be the easiest to travel to by jeep or car? Explain your answer.

3. What might cause the rainfall to change from less than 30″ a year in one area to perhaps 60″ in another?

THINGS TO DO?

Study the three areas.

1. In which area would you expect to find the swift gazelle? Why?
2. Tall giraffes nibble the tops of acacia trees. In which area would they be the most common?
3. The bold stripes of the zebra blend with the shadows. In which area would the zebra be most protected?
4. Leopards can lie on low branches. They pounce on zebras or gazelles. In which area would they be found?
5. The fierce cheetah can run at 60 miles an hour for short distances. He can outrun any animal alive. In what area would he be at home?
6. Mirages are common in this area and gazelles often look like elephants that are walking on water. Is it 1, 2, or 3?
7. The hunter can see only a few yards because of the thorn bushes. Where is he? What is he hunting? Is it dangerous?
8. The car was going 30-40 miles an hour and the ostrich, nearly eight feet tall, was taking eleven-foot strides with ease. Identify the area.
9. Explain why animals that normally stay in one area could be found in any area at some time.

Nature's Gifts to the hunter

What time is it?

What is this lion doing?

Why are the pupils of his eyes so large?

What time is it?

What is this lion doing?

Why are the pupils of his eyes so small?

The cat has the largest eyes, for its size, of any carnivore.
How does this help the lion?

THINGS TO DO

1. Have a classmate close his eyes. When he opens them, look at his pupils. Describe what you notice.
2. Shine a light in his eyes. What happens? Why?
3. Close one of your eyes. Bring your arms directly out in front of you. Touch two pencils end to end by bringing your arms together fairly quickly. Do the pencils meet end to end exactly?
4. Now try it with the other eye closed.
5. Try it with both eyes open. Try it with both eyes closed.
6. Suggest how successful you would be in this exercise if your eyes were placed on the side of your head rather than where they are now.
7. What does this exercise have to do with hunting?
8. The gazelle's food stands still, so he doesn't need the excellent vision of the lion. Is there any advantage for the gazelle in having his eyes on the side of his head?
9. Walk along a narrow bench. How do you keep your balance? How does the lion keep his balance?

DID YOU KNOW?

. . . The lion's eyes are placed like your eyes.

. . . The lion can move his ears to catch sounds better.

. . . The lion has a much better sense of smell than you do.

. . . There are no wild cats in Australia or Antarctica.

1. What use would the lion make of his keen senses of smell, hearing and sight?
2. Do other animals such as the gazelle and zebra have the same keen powers of smell, hearing and sight? Why?
3. The rhinoceros cannot see very well. Does this matter?
4. What different reasons are there for lions and zebras having good senses of smell, hearing and sight?

It was just after the rainy season. The miles of open grassland looked like the wide ocean.

A pride of lions — there were eleven — stood around an eland they had just killed. The male lions were eating greedily. The female lions and their cubs were waiting for their turn to eat. No matter who makes the kill, the male eats first.

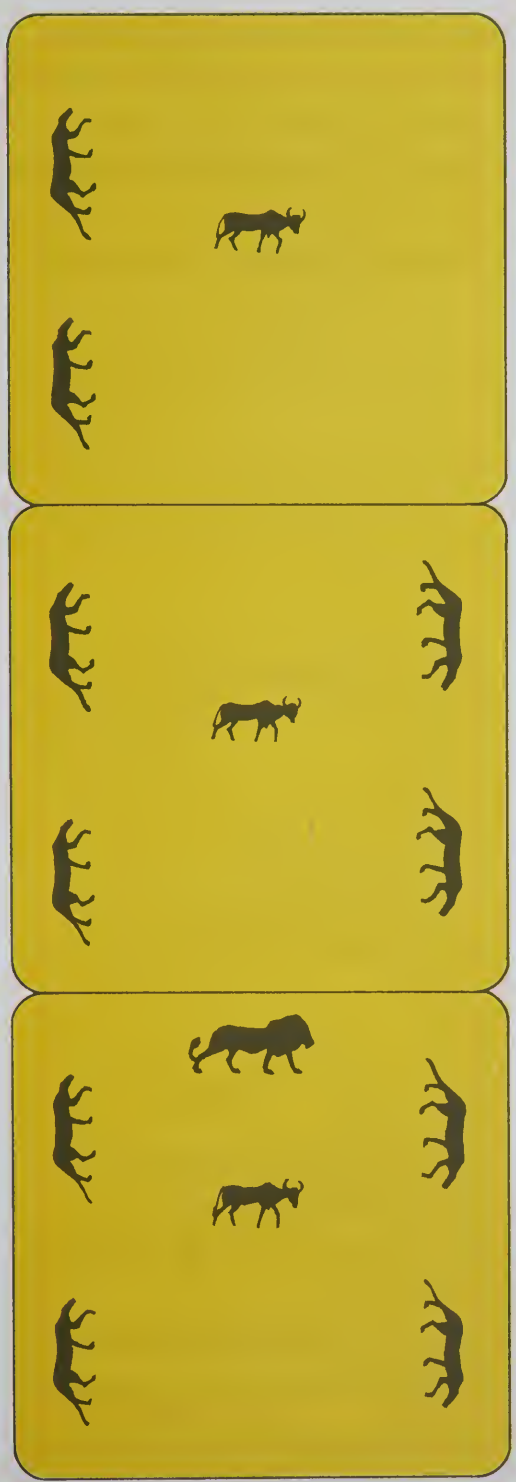
For several days the pride had done little but sleep and rest in the shade. One young male had tried to catch a Thomson's gazelle but it had scampered away. The lion, not really hungry, had flopped down and slept.

THINGS TO DO

Obtain a shoebox. Place 3 or 4 objects in the box. Ask a classmate to identify the contents of the box:

1. by sound alone (he can shake the box if he likes),
2. by smelling,
3. by touching (but don't peek),
4. by seeing.

Which sense gives us the most information? What are some of the ways by which man has been able to improve and extend his senses?



Three days later the pride was hungry again. The lionesses were stalking a gnu. They were being helped by two young males. The males had moved carefully to the other side of the gnu. One old lion walked slowly toward the far end of the box that was being formed.

The gnu grazed quietly. The lions moved slowly. When the gnu raised his head, the females froze in their tracks. Even a lifted paw, ready for the next step, stopped frozen in mid-air. When the gnu started browsing again, the lions moved closer.

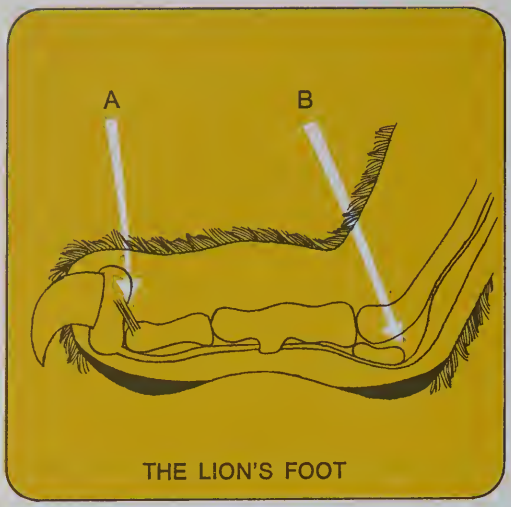
The trap was closed!

Or was it?

The gnu had seen the lions. Was it too late? He was running. In a minute he would be at full speed. The open end of the box closed.

The lionesses were going at full speed too. Every muscle strained for full power.

No sounds could be heard except the heavy breathing of the animals.



THE LION'S FOOT

A and B indicate muscles in the lion's foot.

1. If the muscle at A gets shorter (contracts), what will happen to the lion's claw?
2. What will happen to the claw if the muscle at B contracts?
3. Why does the lion have a foot like this?

THINGS TO DO

1. Run flat-footed.
2. Run on your toes.
3. Which way allows you to run faster? Why?
4. Have a classmate close his eyes. Try to creep up on him without making any noise. Describe the position of your arms and your head. Account for this posture.

Lions can run at speeds of 35 miles an hour when they hunt.

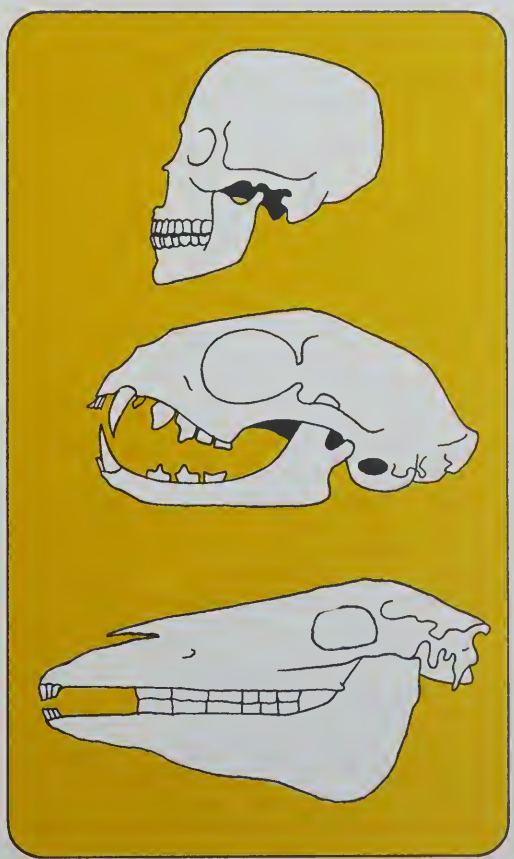
1. Study the pictures at left. Why can the lioness run so fast?
2. Why can the cheetah run twice as fast as the lion?
3. Compared to the lion, what has the cheetah given up in order to run so much faster?

DID YOU KNOW?

. . . The top speed of a man is approximately 30 miles an hour.

a lion	35
an impala	45
a cheetah	70
a bullet	800

1. How important is it for the lion to get as close as possible to an impala before making a rush? Why?
2. How important would it be for an impala to see a cheetah before it got too close? Why?
3. How close does man have to get to his prey when he hunts? Why?



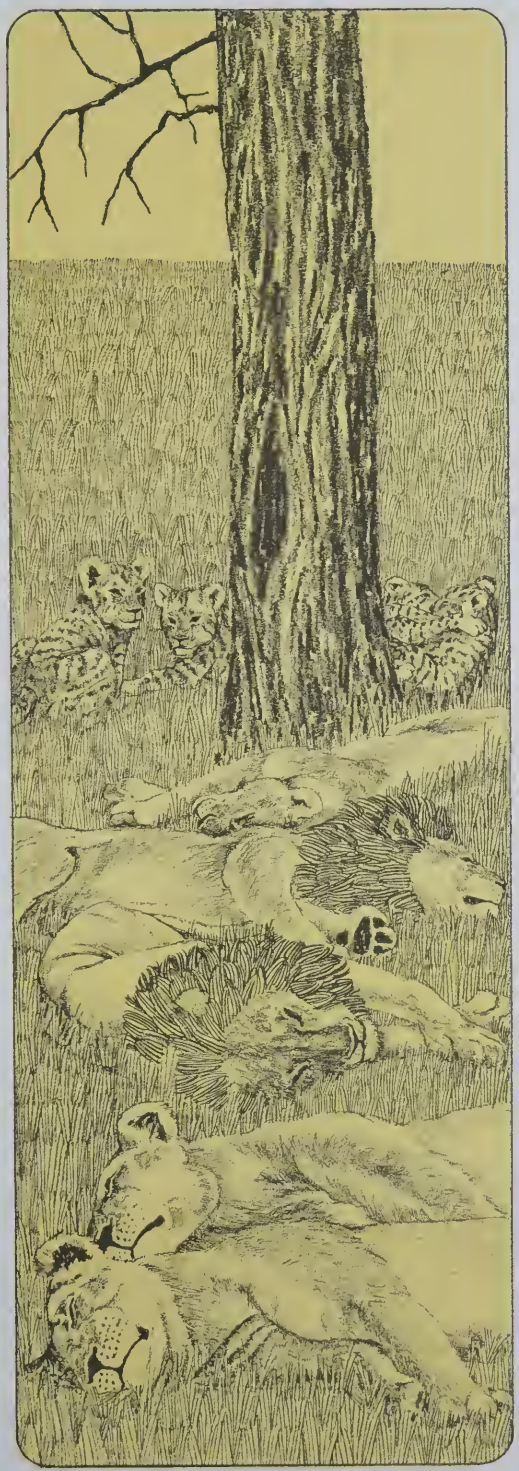
1. Examine the teeth found in these skulls.
2. Is one of these skulls that of a meat eater? A plant eater? Explain.
3. Name the different types of teeth shown.
4. Suggest how the teeth show the eating habits of the animals from which they are taken.

This is a picture of the sabre-toothed tiger cat. This animal does not live on earth now. It is extinct.

1. Suggest reasons why it has disappeared.
2. How has "the" modern lion changed its appearance compared to the sabre-toothed tiger? Remember, they both are members of the cat family.
3. How do you think the changes you have mentioned help the modern cat to survive better?

DID YOU KNOW?

1. When the grazing animals migrate to greener pastures, the lions usually remain in their own territory.
2. The zebras eat tall grass and move on, the wildebeests eat short grass and move on, but gazelles crop the short grass that remains. Thus each species can use the same food supply and survive. Hence the lion doesn't have to migrate with the zebras and wildebeests.
3. Lions generally stay within a very definite territory which they carefully mark out with scents, claw marks, and so on. Can you suggest when they might leave this "home" area?



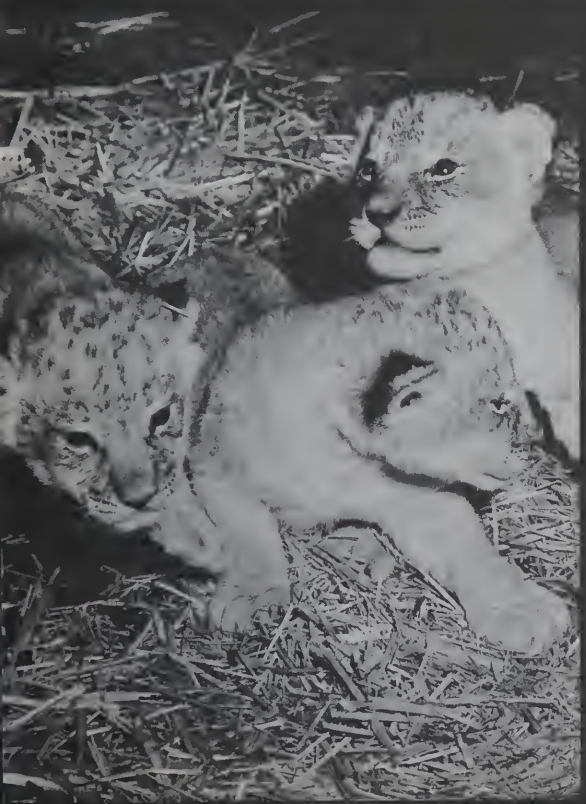
The young lion yawned. He stretched from tip to toe. He looked at his sleeping sister and thoughtfully bit her on the ear. With a snarl she awoke, rose and bared her teeth. Her paw, claws flashing, reached for his nose. Over and over in the grass the young lions rolled. They swatted, growled, ran, leaped and hugged. Everyone was awakened.

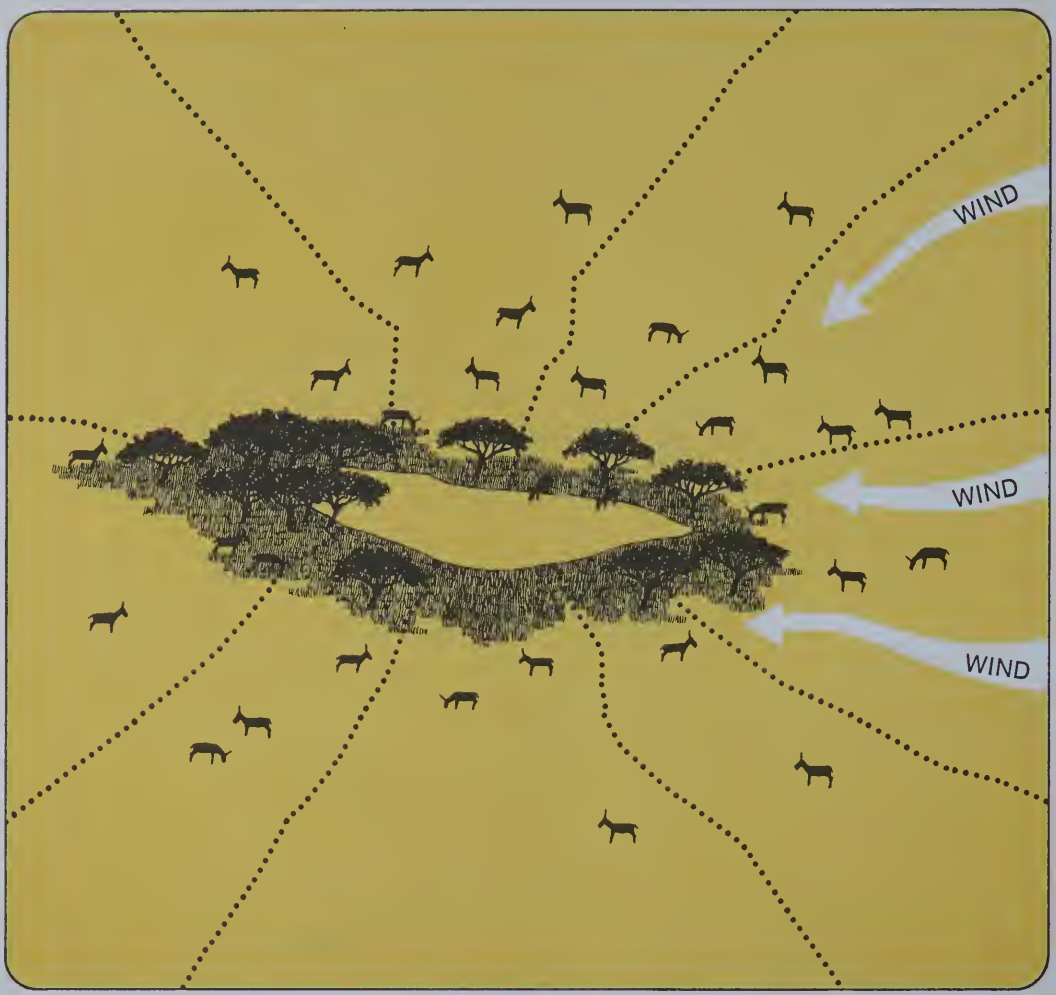
With a mighty roar a lioness bounded at the noise makers. She hit one lightly, but the blow was enough to send the young male rolling over twice.

Now the cubs were playful and wanting attention. The lionesses were friendly and quite happy to play with the cubs. They licked them. When a cub jumped on a tail, making believe it was an animal it had stalked, the lioness would allow the tail to be "killed." If, however, the cub bit too hard, a growl warned the cub to be careful. Then the cubs would roll over, chase one another, topple one another, stop, disappear in the tall grass only to come out with another rush. The pride was very happy.

THE BIG CAT

In many ways, the lives of Africa's great cats are similar to our own. The lions go out for food, play games and sometimes just relax. As all children, lion cubs need the protection of parents while the leopard is particularly well suited for camouflage.





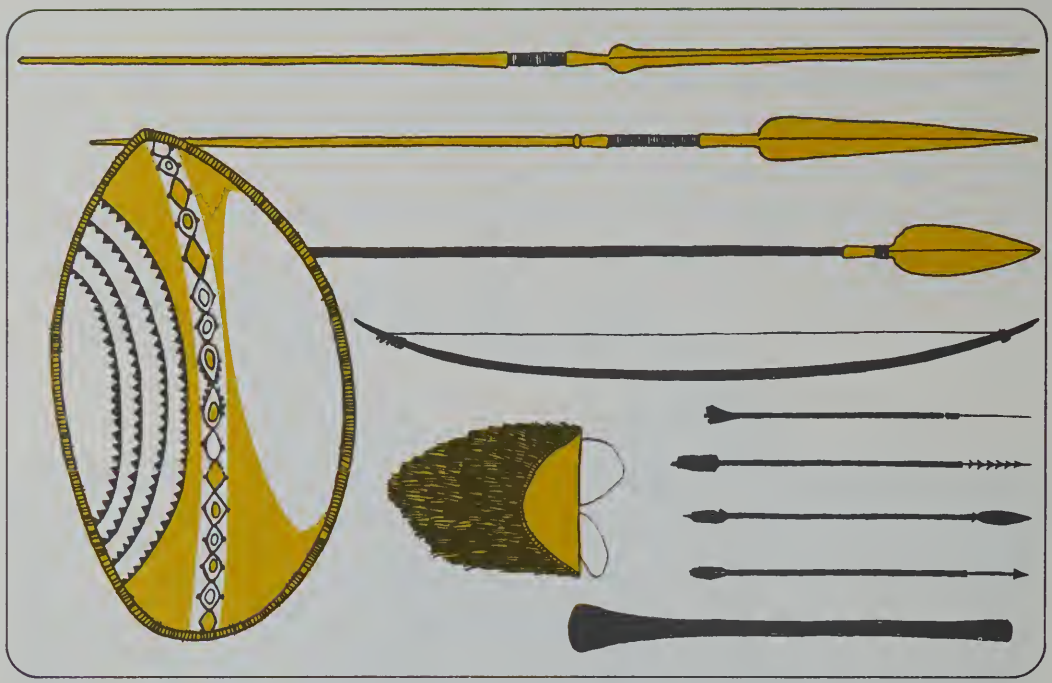
1. If you were a lioness hunting game, where would you locate yourself to be most likely to catch your prey?
2. How would a young lioness on her first few hunts soon find out the best positions to lie in wait?
3. If she couldn't do this, what would happen to her? Why does Nature work in this way?
4. What skills has the lion had to use or develop in this hunting game?

It was late in the dry season. The grass was burned until it shone like a gold and brown carpet. Dust moved as the wind blew. Only a few patches of moist mud remained to remind one of the long rains. These mud holes were the watering places to which the gazelles came for a drink.

With the dry weather everywhere in the study area, the zebras and the gnus had migrated. They went in search of areas with more water and longer grass. Only the gazelles remained. They cropped the short young grass sprouts.

The lions, too, had stayed. They had their own territory and would only leave it if drought became so severe that all the animals and water disappeared. Such droughts do happen.

Masai/The Blood Drinker



1. Why did man (Masai) have to develop such weapons?
2. What made it possible for him to do so?

DID YOU KNOW?

. . . Before becoming a man (a warrior), a Masai boy must kill a lion by himself. He can carry any two of the weapons above.

1. Which two of the above weapons would you take if you had to kill a lion ?
2. What chance would you have of being successful? Do you think this is a good way to bring new warriors into the tribe? Explain your answer.
3. Would your father be willing to do something like this to take a man's job? Ask him.

THE MASAI CHARACTERISTICS:

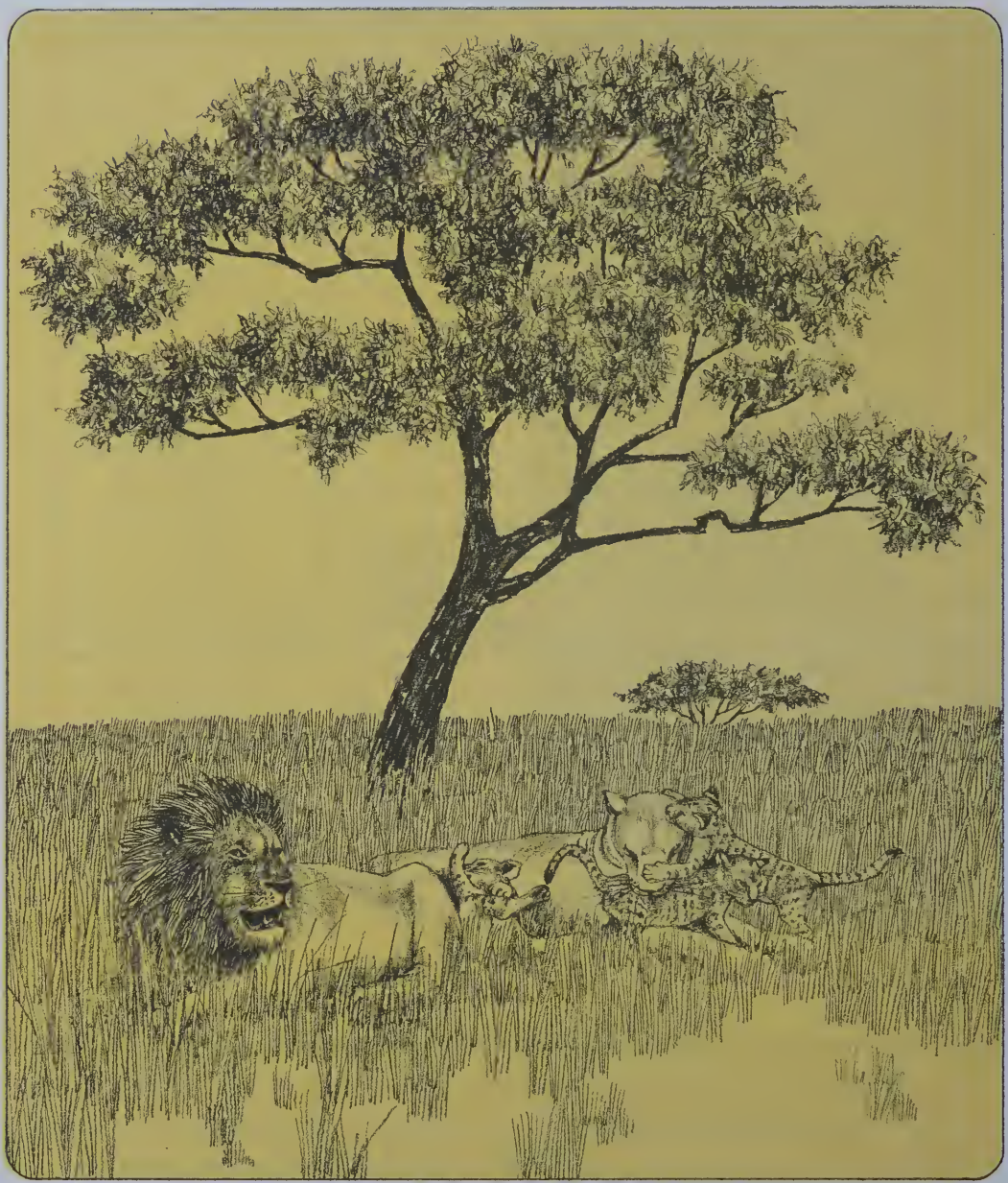
tall and slender
long limbs, small bones
narrow feet and hands
long fingers
head high, narrow thin face
fine-cut features

These are words used by people to describe the appearance of the Masai.

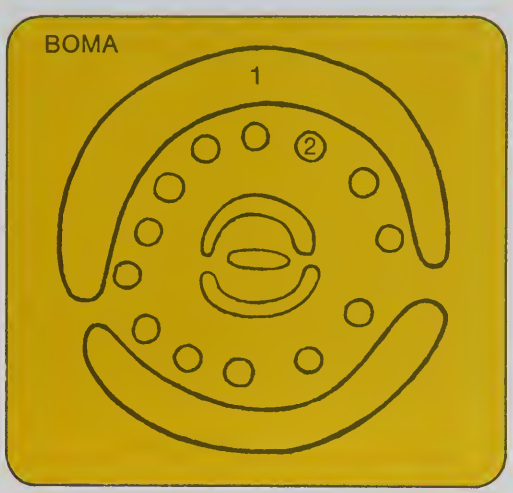
1. Do you agree that the words accurately describe the Masai warriors pictured on this page?
2. Are there any other things you would add to this list after examining the picture?
3. Make a list of the activities for which the Masai seem best suited. Use the pictures and information given above.

A TURN FOR THE VERSE...

My mud hut is called a boma,
And to me it is home sweet homa;
But leave it we must,
When the grass turns to dust,
And for water we just have to roama.



1. What does this diagram tell you about lions?
2. Why is this a suitable home for lions in the grasslands?



1. What is being shown in the diagram labelled "boma"?
2. Identify (1) and (2) in the diagram.
3. What materials have been used in building this kraal? Why were they used?
4. Explain the shape and purpose of this kraal.
5. What English word does "kraal" sound like? How are these words similar in more than just sound?

DID YOU KNOW?

. . . During the dry season, Masai herdsmen will carry small calves for many hours until they find water.

. . . A boma is a circular kraal enclosed by a high fence of thorny bushes.

The Kraal

The usual long rainy season had not arrived. The men of the village were worried. Already their cattle were thin. Soon even the water hole would be dry.

Eban, a young Masai boy, sat on a branch high in a huge baobab tree. The life of a Masai boy of ten was all fun. He did not go to school, nor did he have to work. He looked at a rolling cloud of dust moving along the motor-track. He recognized the zebra-striped Land Rover. In it would be the tourists who came to the big hole called Ngorongoro Crater to see lions, hippos, elephants, elands, hyena, cape buffalo, gnu, and many other animals. He thought he would like to go himself some day. Then he climbed down from the tree.

DID YOU KNOW?

. . . Savannas are tropical grasslands which have tall, tufted grasses and scattered clumps of trees.

. . . There is a change from savanna to scrub thorn country when the precipitation drops below 625 millimetres. (What is the rainfall in your area in millimetres?)

. . . The open canopy of the tree pattern allows a sufficient light to encourage the growth of grass.

. . . The new leaves appear, not after the beginning of the rainy season, but several weeks before, during the hottest weather and when the soil is at its driest.

At six o'clock the next morning Eban got up. He did not know the time, however, for there were no watches, clocks, radios, or TV sets in the boma.

Eban could not hop out of bed. There are no beds in the boma. He, like everyone else in the kraal, slept on an animal skin which had been scraped clean.

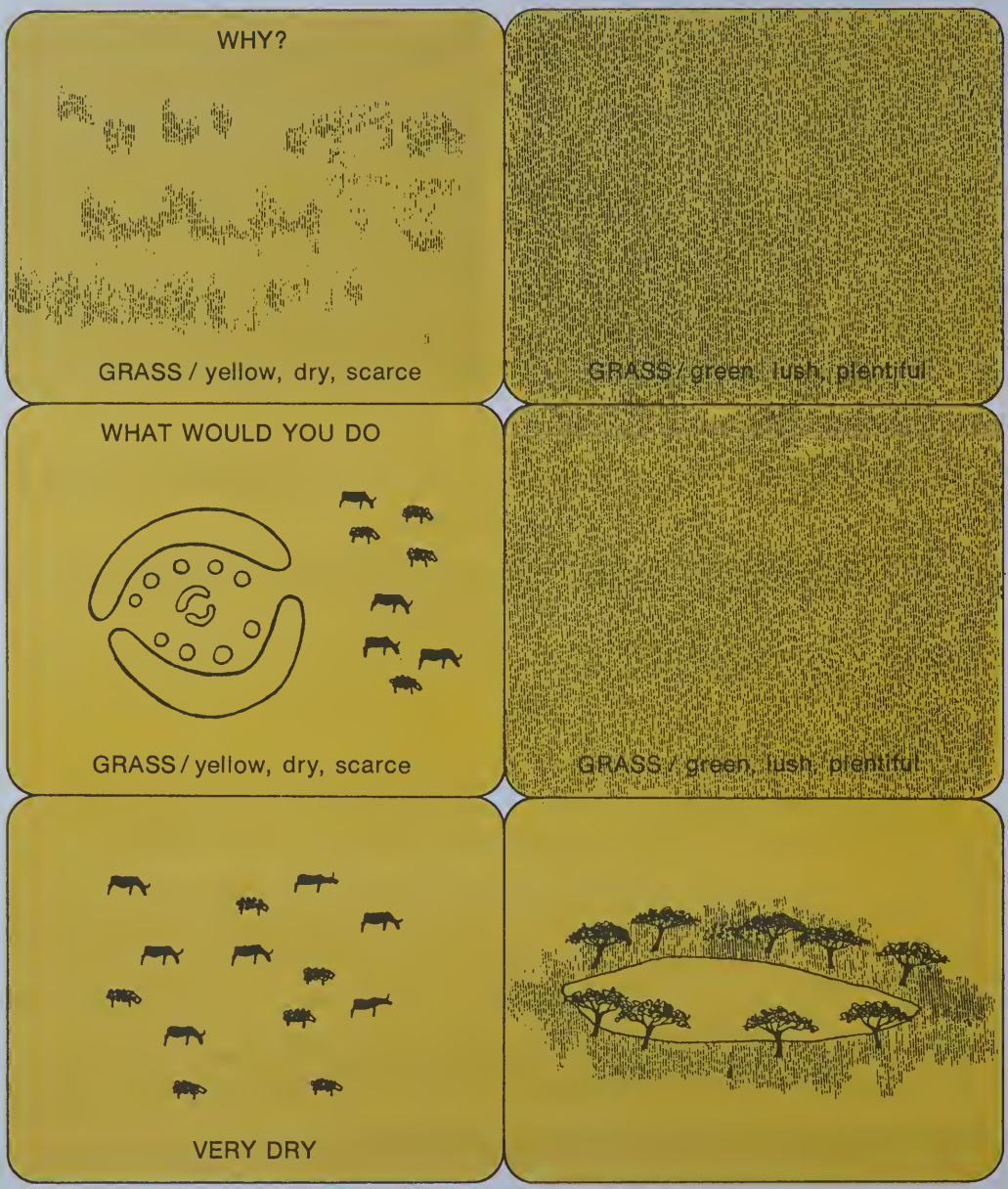
The hut his mother had built was still dark. It had no windows. It had no lights. Every night when the sun went down, people went to sleep and the village became very quiet for it was dark everywhere.

He went outside and looked at the pink glow in the sky. The red sun could be seen just rising. Perhaps it will rain today, he thought. If not, we will have to burn our village and move away.

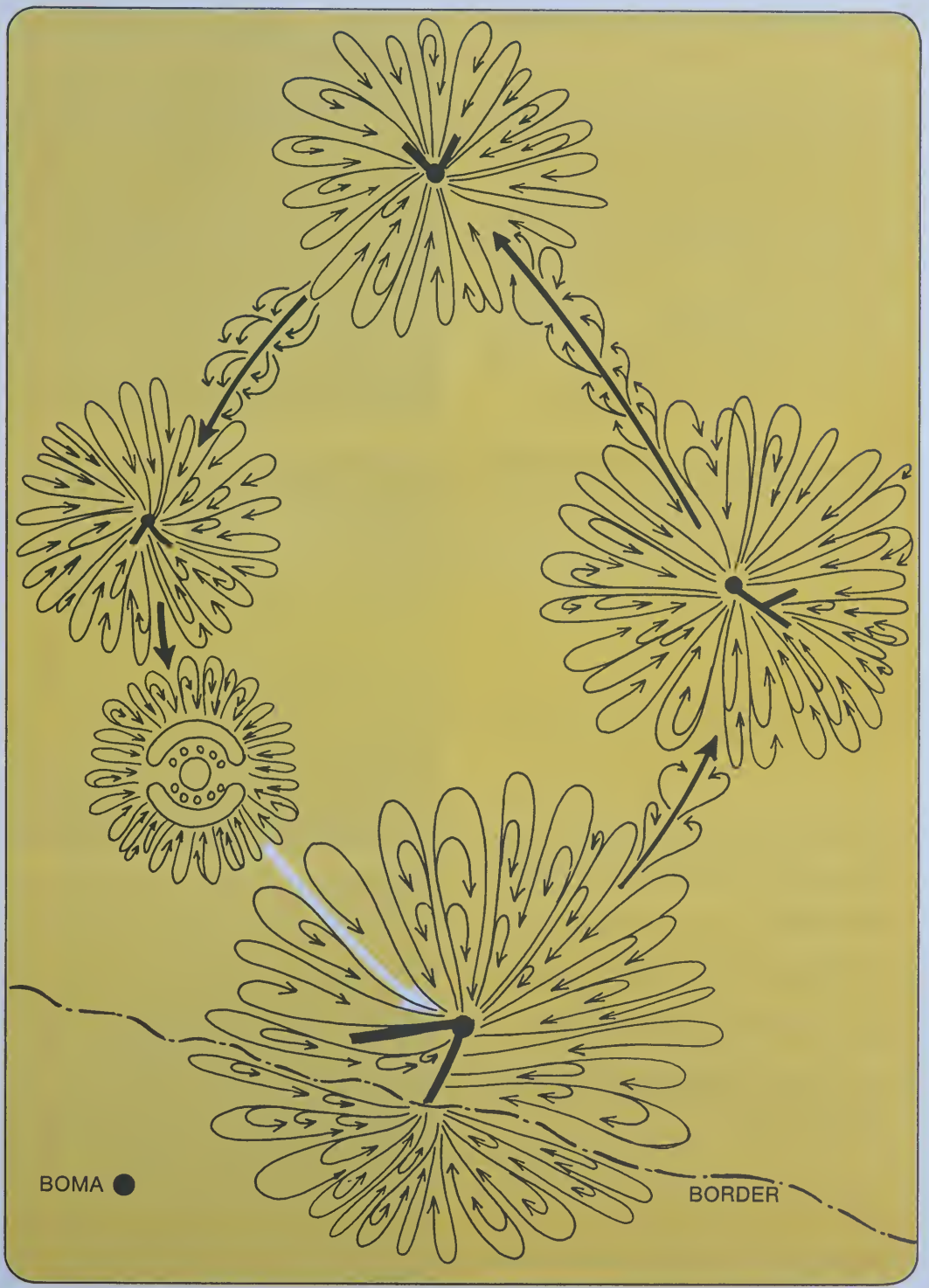
DID YOU KNOW?

. . . There are three reasons for a boma to be abandoned and burned.

1. The drought is so severe that the Masai must move away.
2. If someone dies inside the boma, the Masai leave and build a new kraal.
3. When the cattle dung gets very deep inside the boma, it is time to go elsewhere.



1. Study the diagrams on this page and explain what each diagram tells you.
2. In the diagrams on the next page, find the heavy arrows. Draw them on a blank piece of paper. What do you have? What do the arrows mean? What do they have to do with the pictures on this page?
3. Can you figure out what the flower-like patterns mean?


BOMA
BORDER

hides,
stakes,
roof poles,
uprights,
long grass,
cow dung,
mud

THE HUT

1. Use the words above and the pictures to help you in writing about Eban's hut.

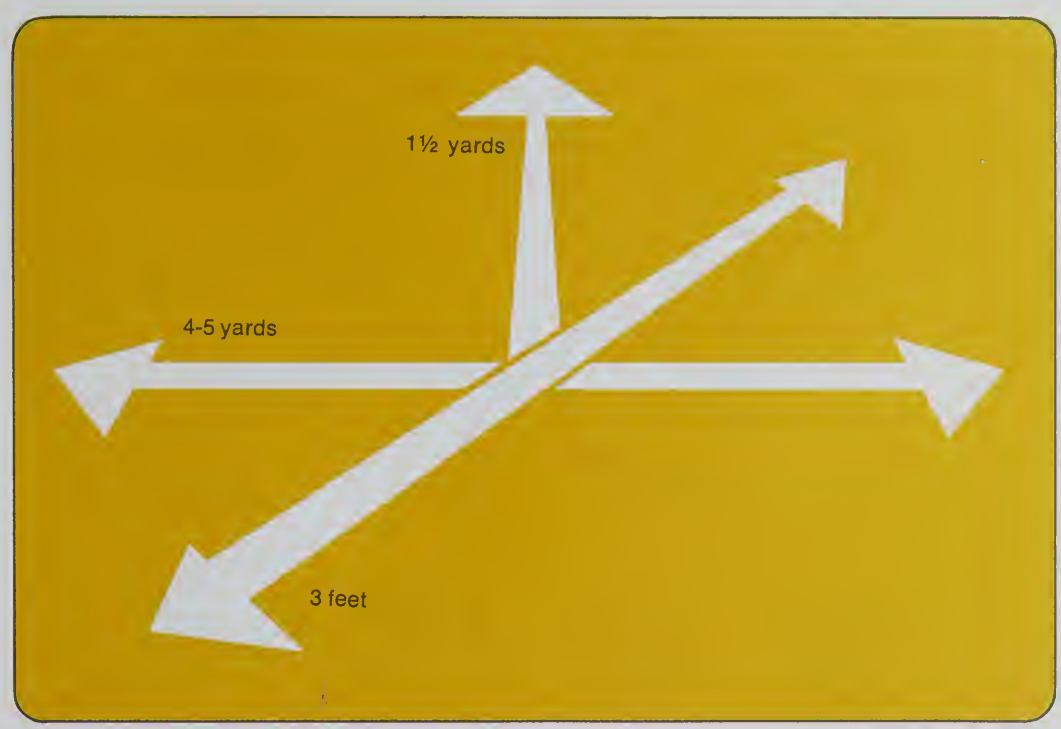
2. How long do you think it will take to build such a house? Give reasons for the time you choose.

3. How long did it take to build your home? Can you find out? Who might know?

4. What would the difference in the cost of each home be?

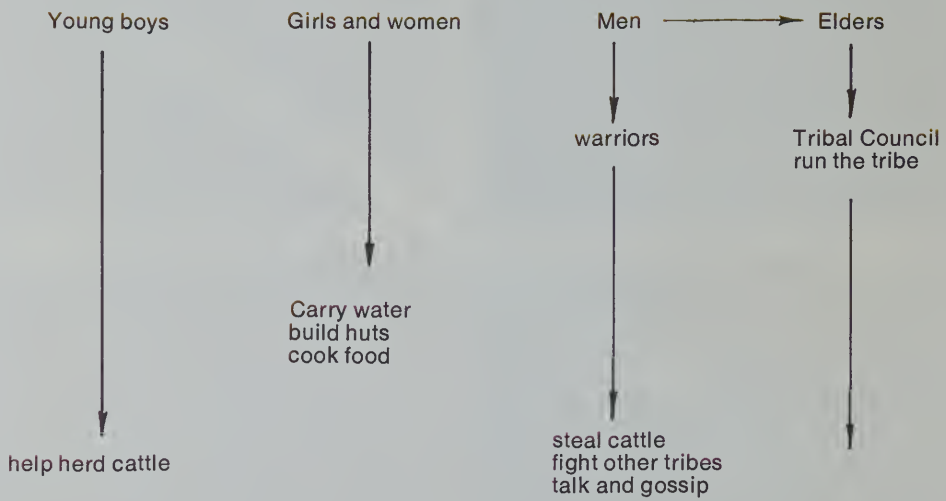
5. Which house reflects most closely the local environment? Make lists to explain your choice.

Masai Hut



1. Convert all the measurements to either feet or yards.
2. How much time do you think Eban's family will spend inside their home each day? How many hours each day do you usually spend inside your home? Explain your answers.
3. If you had to live in such a hut, what are the two or three things you would dislike the most?
4. What things that you take for granted at home would not be found in these huts?
5. Why do the Masai not build more elaborate huts to live in?

The Tribe



1. What do you learn about the Masai people when you read this chart?
2. Use the expression "division of labour" to explain the way of life of the Masai.
3. In which category would you be found? Would you enjoy doing the tasks listed? Why?
4. Where would your father fit in the Masai tribe?
5. Ask your mother and your grandmother to comment on their jobs if they were Masai.
6. Who do you think has the best life in the tribe? Explain.
7. Make a similar chart for a Canadian village or city.

Can you explain this?

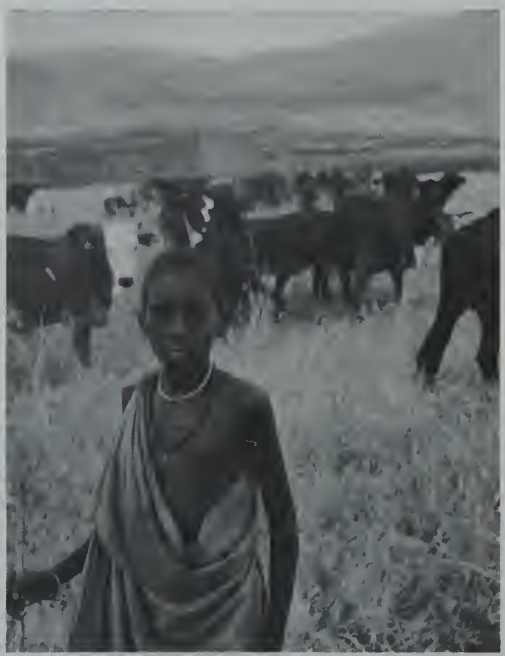
1. What seems to be more important than money in the Masai way of life? What do you think of this idea? Do we use money as our way of showing how wealthy we are? What things do we use to impress others?
2. Who is the chief man in the diagram above? Explain. Would the same fact be true in Canada today? Explain.
3. Why is money better than cattle as a sign of wealth?

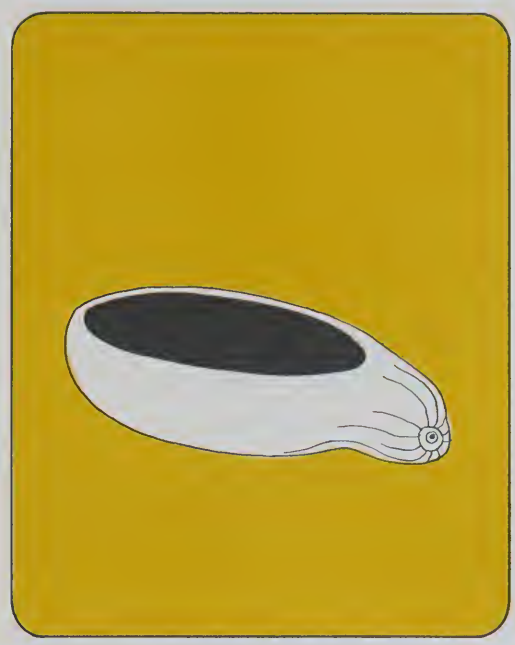
Masai Cattle

This cow gives between 300 and 500 pounds of milk per year.

1. Why is there such a difference between the output of milk of Canadian and Masai cattle? (Use the ideas covered in the exercises on climate and on natural vegetation.)
2. Why is a Canadian cow much larger and more healthy-looking than a Masai cow?
3. Why does each Masai family try to keep as many cows as it can?
4. Some men in the Masai tribe have five or more wives. Others have only one. What might be the reason for this?

This cow gives about 5000 pounds of milk per year.





The rain Eban wished for did not come. The drought became critical. The elders of the tribal council decided that the kraal would have to be abandoned. So the village was burned.

Eban enjoyed the move. Before the kraal was put to the torch, all the household belongings had been piled onto — his mother! Men did no work in the Masai tribe — just the women and girls. The household belongings were very few, however, just an earthen cookpot, some calabashes, and some skins. That was it.

The cattle, sheep and goats were rounded up and the Masai began their journey. Eban wondered where they would go.

DID YOU KNOW?

. . . Rhinoceros sleep very soundly. They do not like to be disturbed. The Masai boys, like Eban, play a game with a sleeping rhino. They steal up to the sleeping beast and place a stone on its back. The next boy has to remove this stone without waking the rhino. Then another boy has to replace the stone. This goes on until the rhino wakes up. That boy runs. So do the rest.

Masai has gone.

Cow has gone.

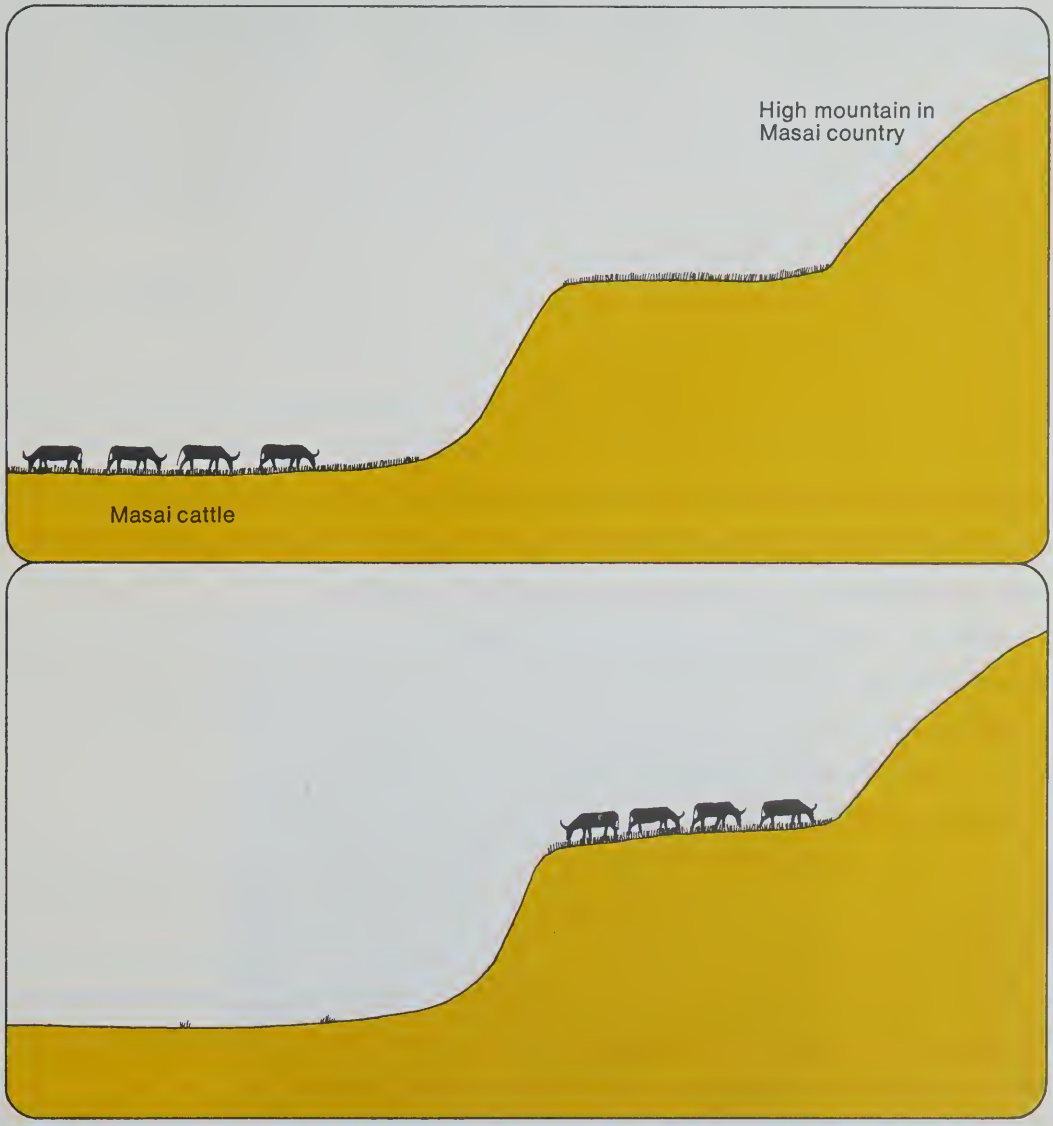
Village has been deserted.

Grass has died.

1. Study these three diagrams.

2. Tell the story the sketches suggest.

3. How often have you changed your address? Do you burn your house when you leave? Why?



1. How does this set of two diagrams fit into the three on the page before?

2. How can you explain the movement of the Masai cattle?

3. Draw a picture to show what else will be found on the mountain side.

Building a new Kraal and hut

Eban's village had been burned. His mother had carried the household belongings and his father had looked after their goat and seven cows. Together the family had walked for three weeks until they had found a place to build a hut in the new boma.

It was up to Eban's mother to build the new home. She cut boughs, gathered them and carried them inside the thorn fence. She put one end of the boughs in the ground and bent the other over. She wove bough after bough into the frame. Soon a flat-roofed building with rounded corners, about three and half feet high, was built.

To keep out the wind she plastered the frame with mud and cow-dung. During rainy weather a covering of animal hides was placed on the hut. (From the air, the huts in the boma would look like small round cheeses. You could say they smelled stronger than cheese, but the Masai never notice the smell.)

Eban lost no time in exploring his new surroundings. There were many more trees than he had had to climb in the old area. He liked climbing trees. He noticed the cattle did not wander far because grass was plentiful.

From his vantage point high in the tree, Eban continued to look around at his new neighbourhood. He saw a herd of buffalo, at least a hundred of them, come out of the morning mist. The violet sky was getting lighter. He noticed that the buffalo were in a long line, with one buffalo away out in front, the remainder following one by one. They were moving toward the winding river bed, past the wide-branching trees with thorns like spikes.

Up in the sky he saw movement. Vultures! He knew that these scavengers were never very far away from death. He watched them drifting lazily in the now pale blue sky, and he wondered what lay dead in that direction. His dreaming was cut short as his eye caught a

lion padding by, his face still bloody-red right around to his ears. Eban was beginning to put pieces of evidence together.

His eyes gazed out over the plain. It had looked so burned and dry several weeks before, but since the rains had come, green grass was showing everywhere. It was lovely, this open country with no fences, no ditches, no paved roads.

DID YOU KNOW?

. . . In the Masai tribe, boys get a new name every few years.

. . . When the boy reaches a certain age, his father and he exchange names.

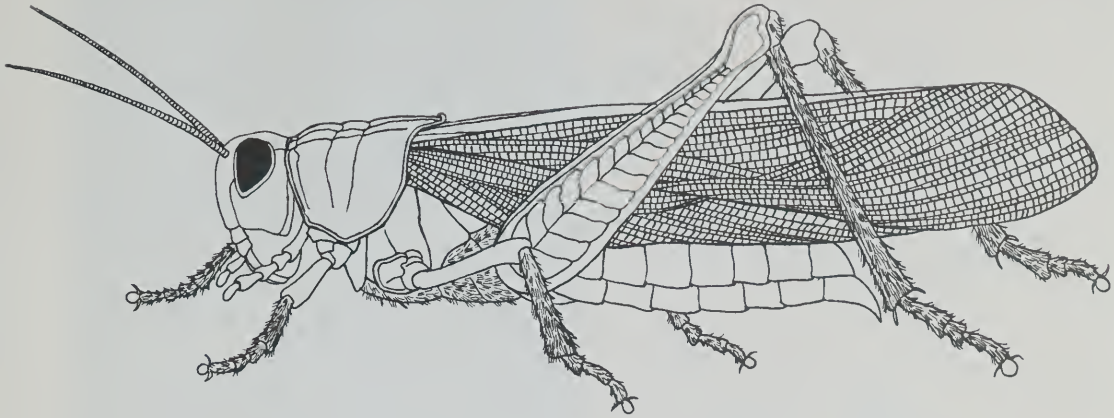
Masai Diet

cow's milk, fresh
cow's milk, sour
sheep's milk
cow's blood
sheep's blood
mutton
other meat (on special occasions only)

millet
corn
roots
bananas
wild honey

} eaten by all except warriors

1. Do you think this is a good diet to keep a person strong and healthy?
2. List the most noticeable differences from our own diet.
3. What is the main source of the Masai diet?
4. How would you like this diet? Explain why you like some things and not others.
5. How does the diet of the Masai reflect the the land in which he lives?
6. How does the diet of the Masai reflect, in part, his nomadic way of life?
7. How does your diet reflect your sedentary way of life?



The young Masai boys loved to listen to the stories about the days gone by. Eban would always remember his father telling him about the grasshoppers.

"We saw a shadow, or a dark cloud, like a long line of grey-black smoke. It looked to us as if someone had been burning grass away over near the horizon.

"Soon the sun, which was shining brightly, was hidden from sight. The grasshoppers had come. They landed at first in ones and twos.

"They were as long as your thumb, brownish grey and pink in colour. So many landed you could not walk without stepping on them. They were whistling and shrieking as they flew, sounding like a strong wind.

"The grass for our cattle just disappeared.

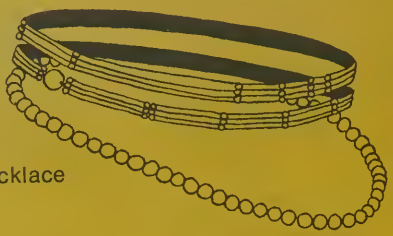
"Soon a great flight of birds followed the coming of these pests. The stork, cranes and other birds ate thousands of grasshoppers."

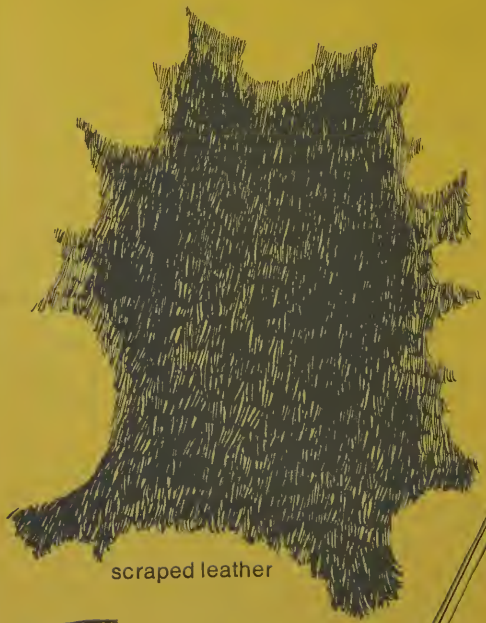
DID YOU KNOW?

. . . The grasshopper weighs about 1/10 of an ounce.

. . . Enough grasshoppers can land on a big tree to break it down and topple it over.

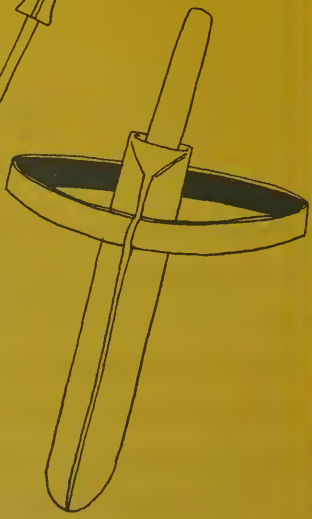
necklace

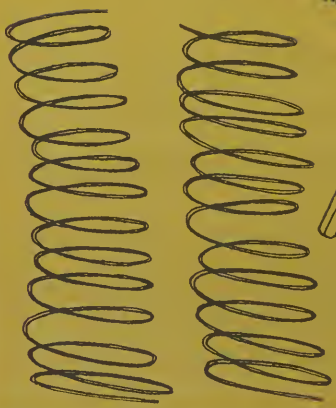




scraped leather

spear





fine telegraph wire

These are the belongings of some Masai.

1. Do you think they use the telegraph wire to send messages? Explain.

2. Can you suggest how native people use wire, iron chain links, small corks and film cans?

DID YOU KNOW?

. . . The Masai never take a bath.

. . . For cosmetics the Masai women use grease mixed with red earth.

. . . Masai women and girls shave their heads.

. . . Masai warriors braid their hair and plaster it with red clay and grease.

. . . Men and women stretch their ear-lobes, often until they touch the shoulder. A cork or piece of ivory or some other object is placed in the hole.

. . . Around their necks the Masai wear beads and fine wire.

. . . Flies are everywhere in the Masai village.

1. Explain why the Masai have these health habits that are strange to us.
2. The Masai say that white men have a very funny smell! How can this be?
3. Flies can be found everywhere in a Masai village — on babies, children and adults. Why do you think this is so?
4. Why do we dislike flies? What do we do about them?


AFRICA
$1280

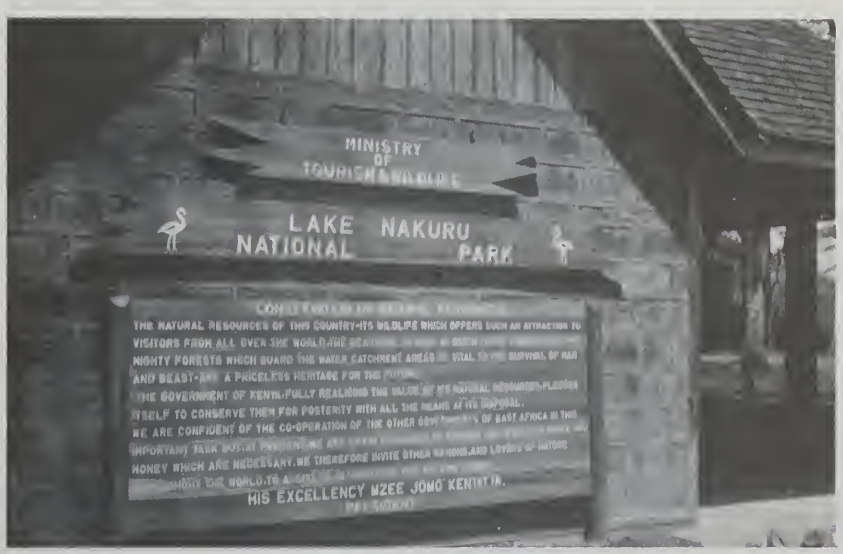
Examine the figures on Masai population.

Year	Number of Masai People	
1850	50,000	approximate
1940	10,000	
1970	30,000	

Examine these figures on lion population.

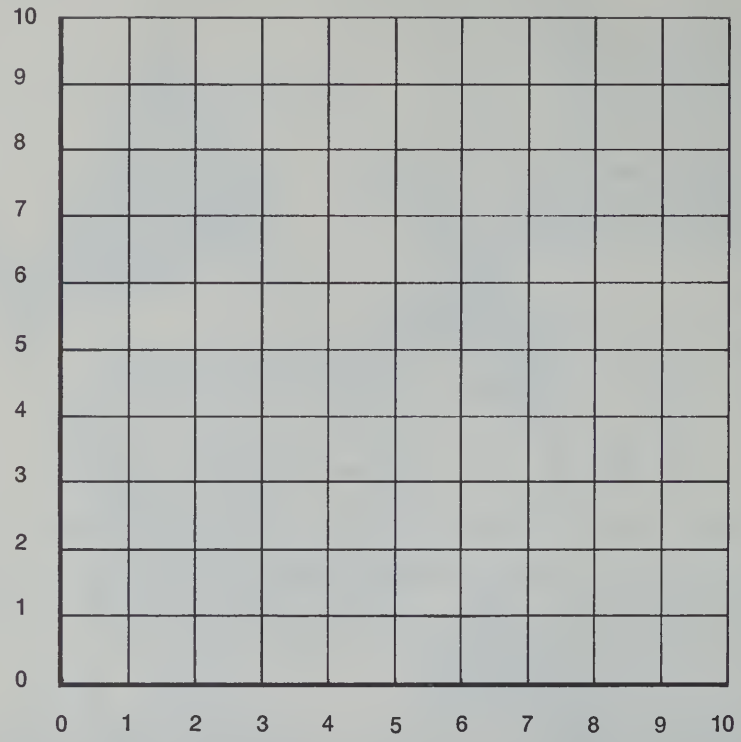
Year	Number of Lions	
1850	10,000	approximate
1940	5,000	
1970	2,500	

1. Can you suggest reasons for the decline of the Masai from 1850 to 1940?
2. Suggest reasons for the increase in Masai from 1940 to 1970.
3. Why has the number of lions been going down steadily? Use the idea page at left to help you.



4. Of what significance is the sign?
5. List as many ways as you can that will help conserve the earth's wildlife.

THINGS TO DO



1. One student (or half the class) represents a zebra. Another student (or the other half of the class) is a lion. Take turns and call out a point on the graph, for example, 3 up and 5 over. Try to get 4 points in a row. If the zebra does this, he escapes. If the lion does this, he catches the zebra.
2. Try the game with a faster zebra. (Here you need only 3 in a row.)
3. Try the game with a slower zebra. (Here you need 5 points in a row to escape.)
4. Try the game with 2 lions and 1 zebra (fast).
5. Try the game with 3 lions and 1 zebra. Can you see why lions co-operate in their hunting?
6. Try the game using tiles on the floor and having students occupy the positions.
7. Try the game by drawing in cover and water on the graph. Use wind from a certain direction. Use some lions in ambush. Pretend that a lion must get within one square to catch the zebra. What team can catch a zebra?

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FILMS

African Animals colour 9 min.

Dr. Leakey and the Dawn of Man colour 26 min. (advanced)

Masai in Tanzania colour 14 min.

Big Animals of Africa colour 11 min.

Animals – Ways They Eat colour 11 min.

Food From the Sun colour 10 min.

East Africa colour 21 min. (advanced)

LION

The lion, ruler over all the beasts,
Triumphant moves upon the grassy plain
With sun like gold upon his tawny brow
And dew like silver on his shaggy mane.
Into himself he draws the rolling thunder,
Beneath his flinty paws great boulders quake;
He will dispatch the mouse to burrow under,
The little deer to shiver in the brake.
He sets the fierce whip of each serpent lashing,
The tall giraffe brings humbly to his knees,
Awakes the sloth, and sends the wild boar crashing,
Wide-eyed monkeys chittering, through the trees.
He gazes down into the quiet river,
Parting the green bulrushes to behold
A sunflower-crown of amethyst and silver,
A royal coat of brushed and beaten gold.

William Jay Smith

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